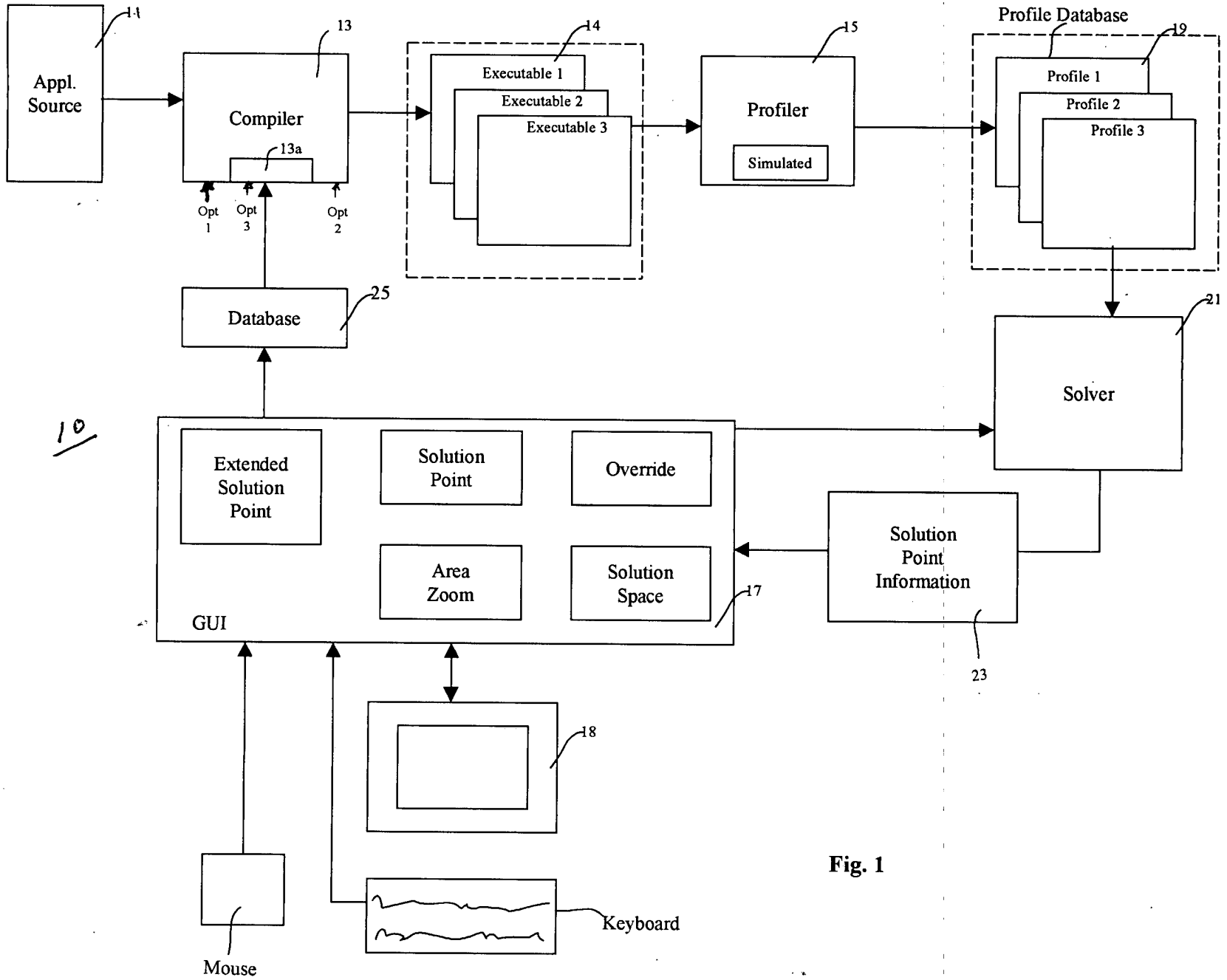
Appl. Source
11
Compiler
13
13a
Opt 1
Opt 3
Opt 2
Executable 1
Executable 2
Executable 3
14
Profiler
15
Simulated
Profile Database
19
Profile 1
Profile 2
Profile 3
Database
25
Solver
21
10
Extended Solution Point
Solution Point
Override
Area Zoom
Solution Space
17
GUI
Solution Point Information
23
18
Keyboard
Mouse

Fig. 1

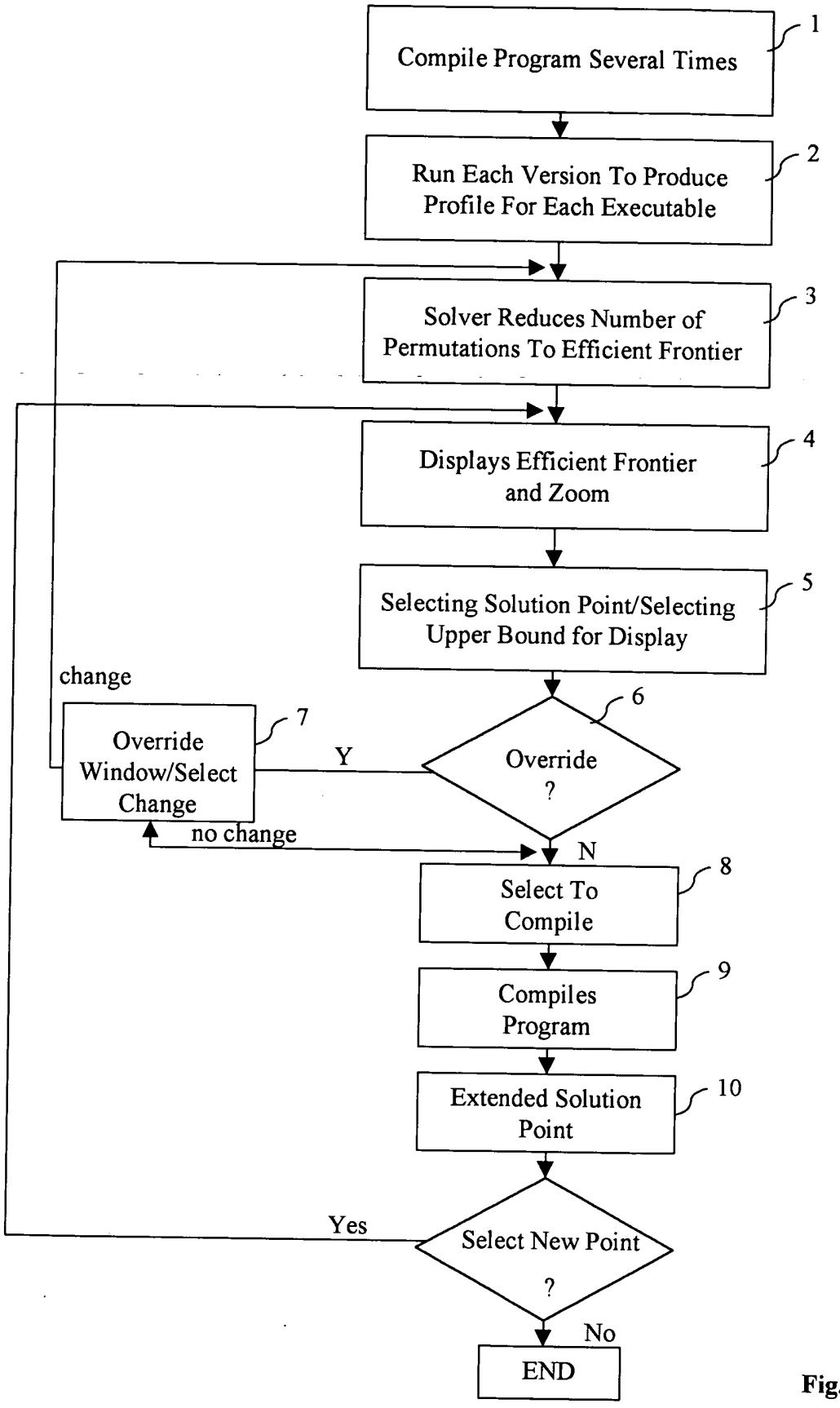
Compile Program Several Times
1
Run Each Version To Produce Profile For Each Executable
2
Solver Reduces Number of Permutations To Efficient Frontier
3
Displays Efficient Frontier and Zoom
4
Selecting Solution Point/Selecting Upper Bound for Display
5
Override ?
6
Y
Override Window/Select Change
7
change
no change
N
Select To Compile
8
Compiles Program
9
Extended Solution Point
10
Select New Point ?
Yes
No
END

Fig. 2

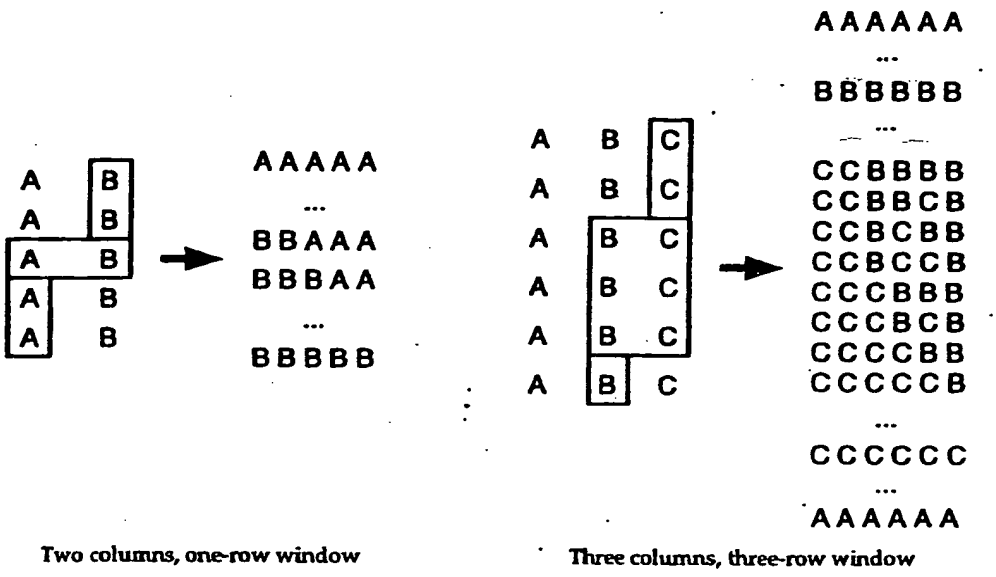

Figure 3: "Linear" Solution Generation

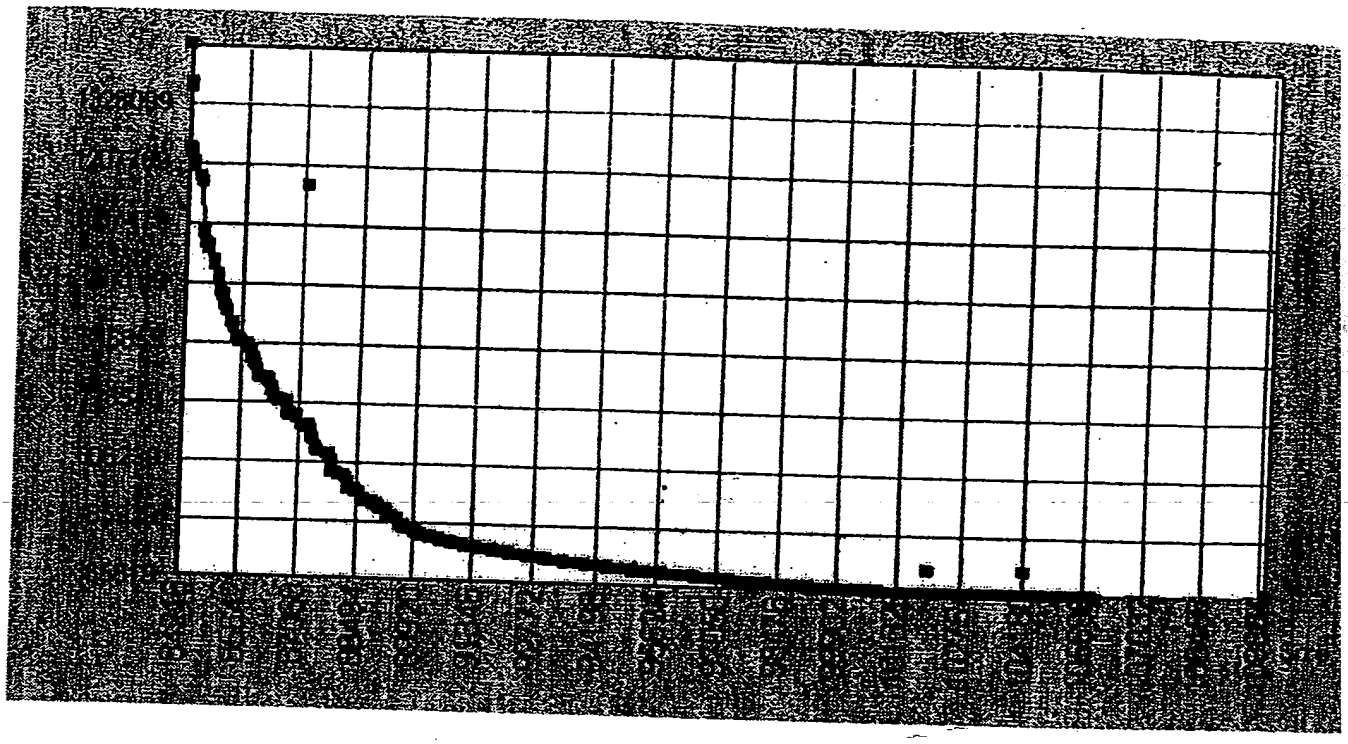

Figure 5

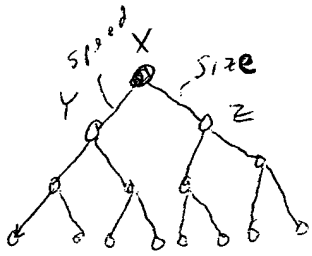

Fig 4

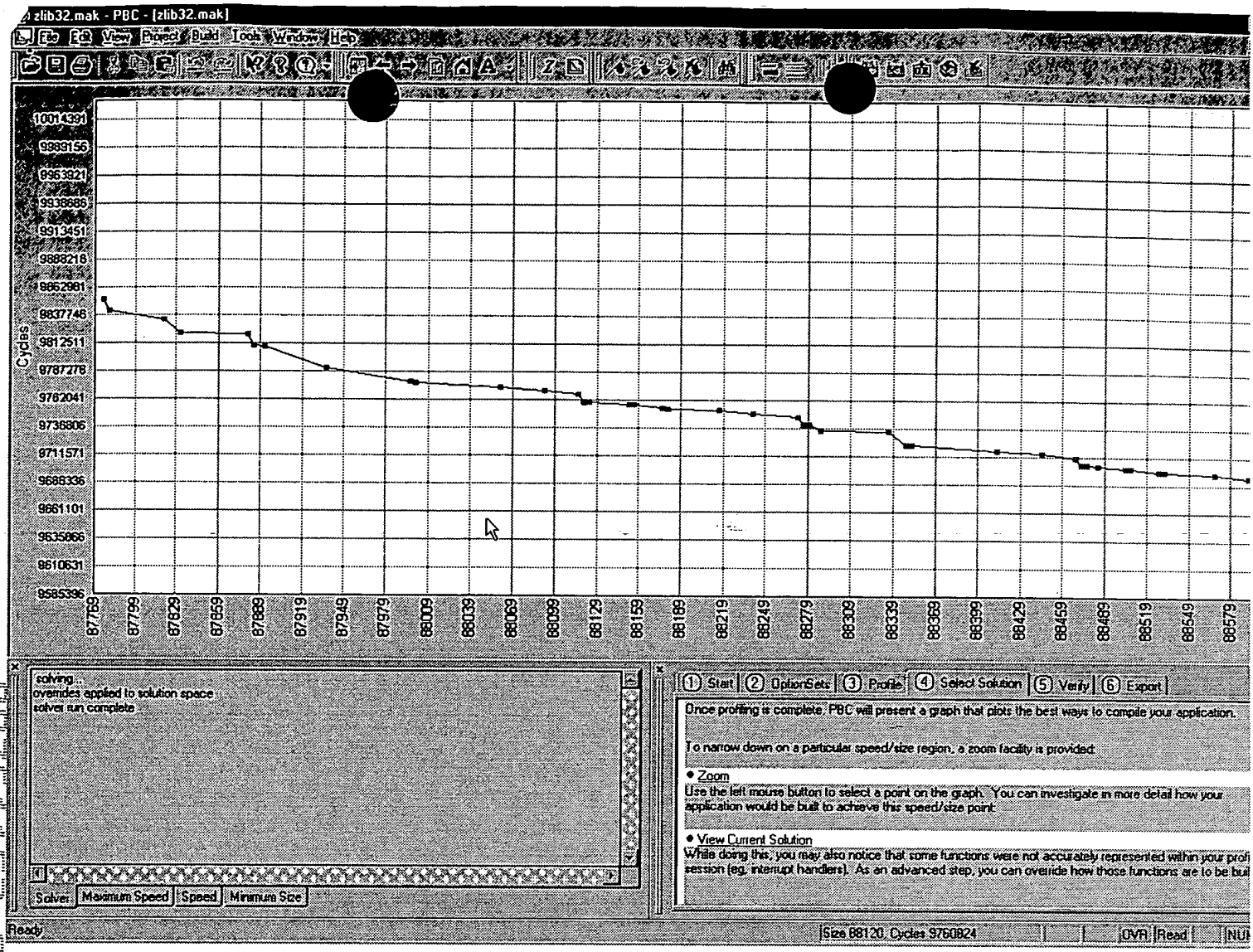
zlib32.mak - PBC - [zlib32.mak]
File Edit View Project Build Tools Window Help
Cycles
10014391
9989156
9963921
9938686
9913451
9888216
9862981
9837746
9812511
9787276
9762041
9736806
9711571
9686336
9661101
9635866
9610631
9585396
87769
87799
87829
87859
87889
87919
87949
87979
88009
88039
88069
88099
88129
88159
88189
88219
88249
88279
88309
88339
88369
88399
88429
88459
88489
88519
88549
88579
solving...
overrides applied to solution space
solver run complete
Solver
Maximum Speed
Speed
Minimum Size
1 Start
2 OptionSets
3 Profile
4 Select Solution
5 Verify
6 Export
Once profiling is complete, PBC will present a graph that plots the best ways to compile your application.
To narrow down on a particular speed/size region, a zoom facility is provided:
• Zoom
Use the left mouse button to select a point on the graph. You can investigate in more detail how your application would be built to achieve this speed/size point.
• View Current Solution
While doing this, you may also notice that some functions were not accurately represented within your profi
session (eg. interrupt handlers). As an advanced step, you can override how those functions are to be bui
Ready
Size 88120, Cycles 9760824
OVR
Read

Fig. 6

Function	Cycles	Size	OptionSet	Options
decoder_homing_fra...	26	80	Size	-o3 -oi0 -ms2
rx_dtx	99	900	Minimum Size	-o3 -oi0 -ms3
D_plsf_5	641	1716	Minimum Size	-o3 -oi0 -ms3
Q_plsf_5	744	1448	Minimum Size	-o3 -oi0 -ms3
decoder_reset	296	368	Minimum Size	-o3 -oi0 -ms3
Int_lpc2	296	224	Minimum Size	-o3 -oi0 -ms3
Lsf_wt	770	236	Minimum Size	-o3 -oi0 -ms3
main	2919	1680	Minimum Size	-o3 -oi0 -ms3
reset_rx_dtx	274	172	Minimum Size	-o3 -oi0 -ms3
reset_tx_dtx	315	184	Minimum Size	-o3 -oi0 -ms3
Enc_lag6	242	344	Minimum Size	-o3 -oi0 -ms3
vad_reset	506	184	Size	-o3 -oi0 -ms2
Int_lpc	616	272	Minimum Size	-o3 -oi0 -ms3

Figure 7

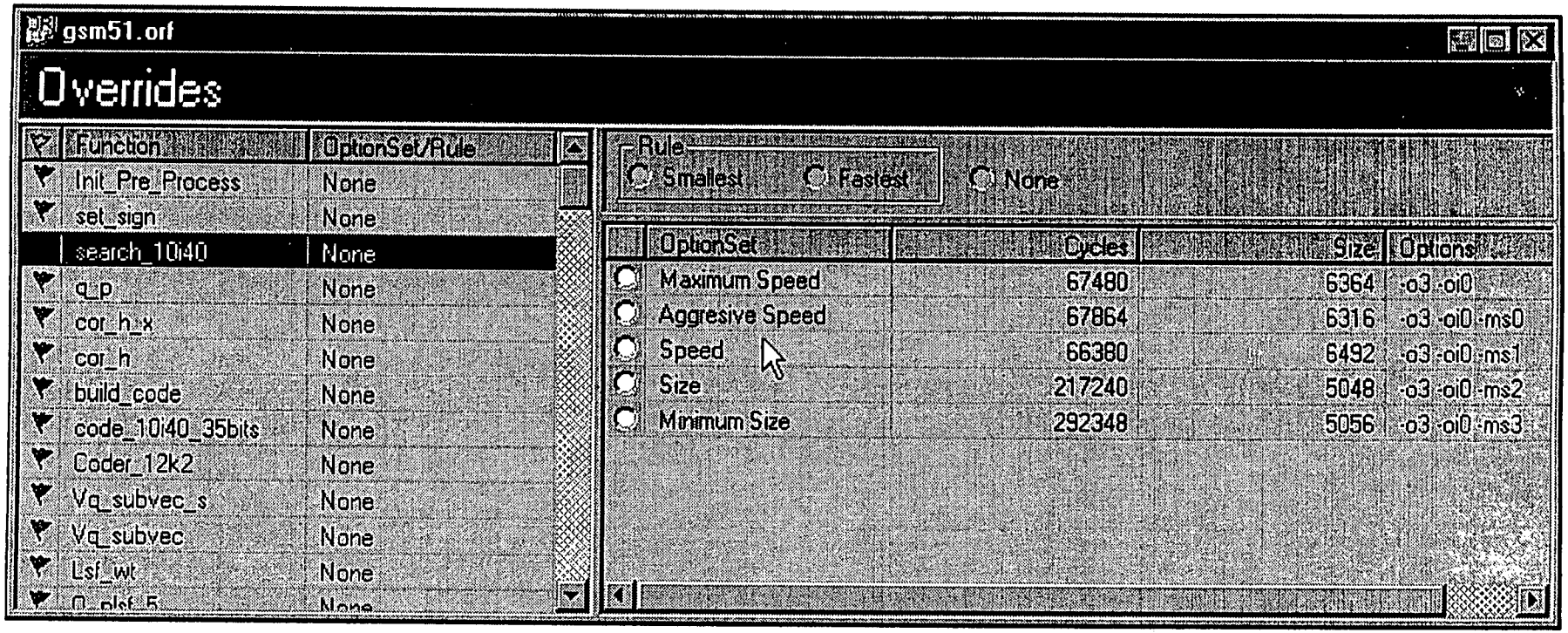
gsm51.orf
Overrides
Function
OptionSet/Rule
Init_Pre_Process
None
set_sign
None
search_10i40
None
q_p
None
cor_h_x
None
cor_h
None
build_code
None
code_10i40_35bits
None
Coder_12k2
None
Vq_subvec_s
None
Vq_subvec
None
Lsf_wt
None
Rule
Smallest
Fastest
None
OptionSet
Cycles
Size
Options
Maximum Speed
67480
6364
-o3 -oi0
Aggresive Speed
67864
6316
-o3 -oi0 -ms0
Speed
66380
6492
-o3 -oi0 -ms1
Size
217240
5048
-o3 -oi0 -ms2
Minimum Size
292348
5056
-o3 -oi0 -ms3

Figure 8

Estimated:		Actual:	
Cycles:	414834	Cycles:	414834
Size:	53024	Size:	53068
Unprofiled Cycles:	80458	Unprofiled Cycles:	80532
Unprofiled Size:	36388	Unprofiled Size:	36436
Total Cycles:	495292	Total Cycles:	495366
Total Size:	89412	Total Size:	89504

Function	Estimated C...	Estimated Size	OptionSet	Profiled Cycles	Profiled Size	Delta Cycle	Delta Size
search_10i40	66380	6492	Speed	66380	6516	0	-24
Syn_filt	32928	744	Maximum Spe...	32928	744	0	0
Vq_subvec	25520	320	Minimum Size	25520	320	0	0
Lag_max	22404	708	Maximum Spe...	22404	708	0	0
Vq_subvec_s	19769	616	Minimum Size	19769	616	0	0
Norm_Corr	16466	1280	Maximum Spe...	16466	1280	0	0
Coder_12k2	16030	3520	Minimum Size	16030	3520	0	0

Figure 9